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File: USPT

Mar 16, 1999

DOCUMENT-IDENTIFIER: US 5882631 A

TITLE: Oral composition

Abstract Text (2):

Addition of porous calcium carbonate to the oral compositions makes it possible to prevent the decrease in the bactericidal activity of water-insoluble noncationic bactericides such as triclosan and improve the stability thereof while exerting excellent effects of eliminating dental plaque, preventing halitosis and eliminating tooth-staining substances. Furthermore, addition of sodium carboxymethyl cellulose to the oral compositions makes it possible to improve rheologic properties and stability with time.

Brief Summary Text (8):

On the other hand, JP-A-8-198623 discloses that porous calcium carbonate having excellent properties of absorbing oil and water has been developed and are usable as a food additive. However, it has never been proposed so far to use this porous calcium carbonate in oral compositions for stabilizing bactericides, eliminating dental plaque, perverting halitosis, etc.

Brief Summary Text (12):

To achieve the above-mentioned objects, the present inventors have conducted extensive studies and, as a result, found out that oral compositions containing porous calcium carbonate and water-insoluble noncationic bactericides have elevated stability with time of the water-insoluble noncationic bactericide, owing to the effect of the porous calcium carbonates, and exhibit improved effects in rheologic properties and stability with time as a preparation and exhibit improved effects of eliminating dental plaque, preventing halitosis and eliminating tooth-staining substances, by compounding sodium carboxymethyl cellulose having an average degree of etherification of 0.5 to 1.8. The present invention has been completed based on this finding.

Brief Summary Text (15):

The porous calcium carbonate to be used in the present invention is porous precipitated calcium carbonate with a high purity and a high porosity wherein secondary particles have been formed by, e.g., multi-stage carboxylation of chained fine particles, different from heavy calcium carbonate forming no secondary particles, ultrafine precipitated calcium carbonate particles (e.g., having a primary particle size of 0.02 to 0.08 μm) or the conventional precipitated calcium carbonate forming secondary particles by natural aggregation. It is available as, for example, PORECAL-N (manufactured by Shiraishi Calcium K.K.).

Brief Summary Text (16):

It is preferable that the porous calcium carbonate to be used in the present invention has an primary particle diameter of from 0.05 to 0.5 μm , more preferably from 0.1 to 0.5 μm , a bulk density of from 0.05 to 0.8 g/ml and a BET specific surface area of from 15 to 100 m^2/g , though the present invention is not restricted thereto. The porous calcium carbonate to be used in the present invention preferably has a secondary particle diameter of from 1 to 5 μm .

Brief Summary Text (17):

The porous calcium carbonate to be used in the present invention may be produced by

multi-stage carboxylation of chained fine particles e.g., as described in JP-A-8-198623.

Brief Summary Text (18):

The content of the porous calcium carbonate in the oral composition of the present invention may range from 0.1 to 40% by weight, preferably from 0.5 to 10% by weight. When the content of porous calcium carbonate is less than 1% by weight, the stability of the water-insoluble noncationic bactericide tends not to be sufficiently elevated. When the content thereof exceeds 40% by weight, on the other hand, the effects tend not to be improved any more.

Brief Summary Text (21):

Among these water-insoluble noncationic bactericides, halogenated diphenyl ethers are preferable and triclosan (2',4,4'-trichloro-2-hydroxy-diphenyl ether) is particularly preferable therefor. In the present invention, the content of the water-insoluble noncationic bactericide may range from 0.001 to 3% by weight, preferably from 0.01 to 1% by weight, based on the whole composition. When the content of the water-insoluble noncationic bactericide is less than 0.001% by weight, sufficient bactericidal effect tends not to be achieved. When the content thereof exceeds 3% by weight, on the other hand, the resultant composition tends to become irritative to the oral mucosa, which results in a problem in practice.

Detailed Description Text (17):

As Table 1 clearly shows, the invention products containing porous calcium carbonate are improved in stability with time and sustain the bactericidal activity, compared with the comparative ones.

Detailed Description Text (23):

As Table 2 shows, the oral composition containing porous calcium carbonate of Example 3 is superior in the capability of adsorbing glucan to the product containing common precipitated calcium carbonate of Comparative Example 4 or that containing common heavy calcium carbonate of Comparative Example 5. That is to say, the oral composition of the present invention is appropriate for eliminating dental plaque.

Detailed Description Text (26):

As Table 2 shows, the invention product is superior in the deodorizing effect to the comparative one. It is therefore recognized that the oral composition is useful in preventing halitosis, since the porous calcium carbonate adsorbs halitosis components and thus eliminate the same (deodorization).

Detailed Description Text (29):

As Table 2 shows, the invention product is superior in the effect of eliminating the tooth-staining substances to the comparative ones. It is therefore recognized that the oral composition containing porous calcium carbonate is useful in eliminating the tooth-staining substances.

Detailed Description Text (42):

As is clear from the results of Table 3, improvement in stability with time and rheological properties is confirmed in the working examples where porous calcium carbonate and sodium carboxymethyl cellulose having a degree of etherification of from 0.5 to 1.8 were compounded, compared to the comparative examples.

Detailed Description Paragraph Table (1):

	Component Content (%)
	<u>porous calcium carbonate</u> given in Table 1
heavy calcium carbonate "	anhydrous silica 3.0 sorbitol given in Table 1
sodium carboxymethyl cellulose given in Table 1	sodium lauryl sulfate given in Table 1
nonionic surfactant "	saccharin sodium 0.1 flavor 1.0 water insoluble noncationic
bactericide 0.3 purified water the balance	total 100.0.

Detailed Description Paragraph Table (6):

	Component Content (%)
	<u>porous calcium carbonate</u> 30.0 (average

primary particle diameter: 0.2 .mu.m, bulk density: 0.5 g/ml, BET specific surface area: 23 m.sup.2) aluminum hydroxide 5.0 sorbitol 20.0 xylitol 5.0 sodium carboxymethyl cellulose 1.5 (degree of etherification: 1.3) sodium lauryl sulfate 1.5 saccharin sodium 0.1 flavor 0.9 triclosan 0.1 purified water the balance total 100.0

Detailed Description Paragraph Table (7):

	Component Content (%)
porous calcium carbonate	6.0 (average primary particle diameter: 0.08 .mu.m, bulk density: 0.4 g/ml, BET specific surface area: 35 m.sup.2)
calcium phosphate	25.0
sorbitol	30.0
propylene glycol	5.0
sodium carboxymethyl cellulose	1.2 (degree of etherification: 1.0)
sodium N-lauroylsarcosinate	1.5
sodium monofluorophosphate	0.5
stevioside	0.1
flavor	0.9
isopropylmethyl phenol	0.5
polyoxyethylene (200)/polyoxy-	1.0
propylene (70) block copolymer	
purified water the balance total	100.0

Detailed Description Paragraph Table (8):

	Component Content (%)
porous calcium carbonate	20.0 (average primary particle diameter: 0.1 .mu.m, bulk density: 0.2 g/ml, BET specific surface area: 60 m.sup.2)
sorbitol	25.0
sodium carboxymethyl cellulose	1.5 (degree of etherification: 0.8)
sodium lauryl sulfate	1.5
saccharin sodium	0.1
flavor	0.9
ethyl p-hydroxybenzoate	0.1
triclosan	0.2
sodium fluoride	0.2
polyoxyethylene (200)/polyoxy-	2.0
propylene (70) block copolymer	
purified water the balance total	100.0

Detailed Description Paragraph Table (9):

	Component Content (%)
anhydrous silica	20.0
porous calcium carbonate	0.5 (average primary particle diameter: 0.05 .mu.m, bulk density: 0.1 g/ml, BET specific surface area: 90 m.sup.2)
sorbitol	25.0
glycerin	12.0
carrageenan	1.0
sodium lauryl sulfate	1.5
sodium benzoate	0.2
saccharin sodium	0.1
flavor	0.5
triclosan	0.3
dl-.alpha.-tocopherol acetate	0.5
polyoxyethylene (150)/polyoxy-	1.5
propylene (35) block copolymer	
sodium silicate	0.5
purified water the balance total	100.0

Detailed Description Paragraph Table (10):

	Component Content (%)
porous calcium carbonate	6.0 (average primary particle diameter: 0.3 .mu.m, bulk density: 0.4 g/ml, BET specific surface area: 25 m.sup.2)
calcium phosphate	25.0
sorbitol	30.0
propylene glycol	5.0
sodium carboxymethyl cellulose	1.2 (degree of etherification: 1.2)
sodium N-lauroylsarcosinate	1.5
sodium monofluorophosphate	0.5
stevioside	0.1
flavor	0.9
polyoxyethylene (200)/polyoxy-	1.0
propylene (70) block copolymer	
purified water the balance total	100.0

Detailed Description Paragraph Table (11):

	Component Content (%)
gum base	28.0
porous calcium carbonate	0.5 (average primary particle diameter: 0.3 .mu.m, bulk density: 0.4 g/ml, BET specific surface area: 25 m.sup.2)
xylitol	40.0
reducing maltose syrup	26.5
flavor	5.0
total	100.0

Detailed Description Paragraph Table (12):

	Component Content (%)
porous calcium carbonate	0.5 (average primary particle diameter: 0.2 .mu.m, bulk density: 0.5 g/ml, BET specific surface area: 23 m.sup.2)
precipitated calcium carbonate	30.0
sorbitol	35.0
sodium carboxymethyl cellulose	0.5 (degree of etherification: 1.8)
sodium lauryl sulfate	1.5
saccharin sodium	0.1
POE (200)/POP (40)	1.0
block copolymer	
flavor	0.9
triclosan	0.1
purified water the balance total	100.0

Detailed Description Paragraph Table (13):

	Component Content (%)
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porous calcium carbonate 5.0 (average primary particle diameter: 0.2 .mu.m, bulk density: 0.5 g/ml, BET specific surface area: 23 m.sup.2) heavy calcium phosphate 30.0 sorbitol 35.0 sodium carboxymethyl cellulose 0.5 (degree of etherification: 1.8) sodium carboxymethyl cellulose 0.3 (degree of etherification: 0.6) sodium lauryl sulfate 1.5 saccharin sodium 0.1 POE (200)/POP (40) 1.0 block copolymer flavor 0.9 triclosan 0.1 purified water the balance total 100.0

CLAIMS:

1. An oral composition comprising toothpaste, liquid dentifrice, or chewing gum containing porous calcium carbonate.
2. An oral composition comprising toothpaste, liquid dentifrice, or chewing gum containing porous calcium carbonate and a water-insoluble noncationic bactericide.
5. The oral composition as claimed in claim 1, wherein said porous calcium carbonate has an average primary particle diameter of from 0.05 to 0.5 .mu.m, a bulk density of from 0.05 to 0.8 g/ml and a BET specific surface area of from 15 to 100 m.sup.2 /g.

WEST Search History

DATE: Friday, October 31, 2003

<u>Set Name</u> side by side	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u> result set
<i>DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>			
L9	L8 and (insulin or diabetes)	1	L9
L8	L2 and mucos\$	2	L8
L7	L2 and nasal adj3 spray	1	L7
L6	L2 and mucosal	1	L6
L5	L2 and (insulin or diabetes)	9	L5
L4	L2 and nasal	2	L4
L3	L2 and insulin and (nasal or inhale\$ or aerosol)	2	L3
L2	porous adj5 calcium adj3 carbonate	319	L2
L1	porous adj3 calcium adj3 carbonate	212	L1

END OF SEARCH HISTORY